

AMENDMENT TO THE CLAIMS

1. (Withdrawn) A process for dispersing plant seeds in an aqueous medium, the process comprising the steps of

feeding a batch of plant seeds and an aqueous medium into a substantially vertical flow-through device having an axially symmetric round process chamber, which device being connected through a suction line at the bottom portion thereof to a pump and through a delivery line at the upper portion thereof to at least one means for stimulating turbulent flow,

priming at least the suction line and the pump with at least an aqueous medium,

dispersing the plant seeds in the aqueous medium by pumping the suspension of the seeds in the aqueous medium through a closed circulation circuit involving turbulent motion and attended heating of the flow of the suspension upstream of the flow-through device and spirally whirling the flow within the device until a product of a predetermined consistency and temperature is obtained,

degassing and discharging the product for packaging,

characterized in that

the flow of the suspension is whirled into a spiral of a radius decreasing from top to bottom and is drawn off for circulation through a central opening in the bottom of the device,

the step of degassing is carried out not later than an axially symmetric funnel-shaped depression is formed in the whirling suspension and

after the product has become as homogenous and heated throughout as desired, the process is discontinued and the circulation circuit is evacuated for the next process.

2. (Withdrawn) The process of claim 1, characterized in that the radius of the spiral is gradually decreased from top to bottom.

3. (Withdrawn) The process of claim 1 or 2, characterized in that at least a part of the aqueous medium is fed to the circulation circuit prior to feeding the seeds thereto.

4. (Withdrawn) The process of claim 1 or 2, characterized in that the suspension is pumped into the flow-through device in at least two streams at various distances upward from the opening in the bottom of the device.

5. (Withdrawn) The process of claim 1 or 2, characterized in that the gas removed from the process chamber is replaced with at least an aqueous medium.

6. (Withdrawn) The process of claim 1 or 2, characterized in that the end product prior to the step of discharging is heated to a temperature not exceeding 100°C.

7. (Currently Amended) An apparatus for dispersing plant seeds in an aqueous medium, comprising

a substantially vertical flow-through device comprising a housing ~~normally closed with a cover and~~ defining an axially symmetric ~~round~~ process chamber tapering from top to bottom and having a round cross-section, an inlet opening at the top thereof, an opening in the bottom thereof axially aligned with the process chamber, and at least one inlet point above the opening

~~in the bottom of said housing communicating with means for discharging gas at the top thereof~~
~~and with an end product discharge line;~~

a removable cover having at least one orifice and normally closed on the inlet opening;

means for discharging gas, said means being in fluid communication with the at least one
orifice in said removable cover;

a continuous-action pump having a suction side and a delivery side;

~~a circulation circuit built around a~~ comprising said housing, said continuous-action pump,
~~whose a suction line connecting the suction side is connected through a suction line to an of said~~
~~continuous-action pump to the opening in the bottom of the said housing, and delivery side is~~
~~connected through a delivery line to the~~ connecting the delivery side of said continuous-action
pump to said housing at the at least one inlet to the housing above the opening at least at one
point for injecting seeds in an aqueous medium through the at least one inlet point into the
process chamber at an angle (α) within range of $30^\circ \leq \alpha < 90^\circ$ to the radius of the circumference of
the axially symmetric round process chamber, the radius being drawn from the center of the
circumference to the at least one inlet point;

at least one means for stimulating turbulent flow of seeds in an aqueous medium,
~~incorporated into the circulation circuit said delivery line upstream of the at least one inlet to the~~
~~housing to set the flow of a circulating fluid into a turbulent motion point;~~

an end product discharge line connected to said suction line; and

at least two valves, one to control said means for discharging gas and another to control
the said end product discharge line[[,]] .

~~characterized in that~~

~~the process chamber is tapered from top to bottom,~~

~~the angle (α) between the radius of the circumference of the inner wall of the housing and the axis of the delivery line at the point of entry into the housing, wherein the vertex of the angle is substantially coincident with the point of intersection of said axis and the generatrix of the inner wall, is within the range of $30^\circ \leq \alpha < 90^\circ$,~~

~~the opening in the bottom of the housing is set true with the axis of symmetry of the housing,~~

~~the end product discharge line is connected to the suction line,~~

~~the cover is removable and has at least one orifice adapted to connect the apparatus to means for discharging gas.~~

8. (Currently Amended) The apparatus of claim 7, ~~characterized in that~~ wherein the process chamber is defined by a cylindrical surface at the upper portion thereof and by a conical surface at the lower portion, both surfaces being smoothly conjoint.

9. (Currently Amended) The apparatus of claim 7, ~~characterized in that~~ wherein the process chamber is defined by a paraboloidal surface.

10. (Currently Amended) The apparatus of claim 7, ~~characterized in that~~ wherein the process chamber is defined by a spheroidal surface.

11. (Currently Amended) The apparatus of any one of claims 7-10, ~~characterized in that~~ wherein the angle (α) is within the range of $60^\circ \leq \alpha < 90^\circ$.

12. (Currently Amended) The apparatus of any one of claims 7-10, ~~characterized in that the~~ wherein said delivery line is connected to the inlet to the housing at least at two points through individual pipes arranged at different levels provided with a branch line connecting the delivery side of said continuous-action pump to said housing at a further inlet point for injecting seeds in an aqueous medium into the process chamber at the angle (α), and wherein the further inlet point being arranged at a level different from that of the inlet point at which said delivery line connects the delivery side of said continuous-action pump to said housing.

13. (Currently Amended) The apparatus of claim 12, ~~characterized in that~~ wherein each of the individual pipes said delivery line and said branch line is provided with a valve.

14. (Currently Amended) The apparatus of any one of claims 7-10, ~~characterized in that~~ further comprising a tubular receptacle for a batch of seeds to be dispersed, is said tubular receptacle being coaxially set up within the process chamber above the opening, in the bottom of said housing, having the an upper end of the tubular receptacle being open and flush level with the at least one inlet point to the process chamber and the a lower end thereof being provided with a coaxially arranged plate to slow down the seeds leaving the tubular receptacle.

15. (Currently Amended) The apparatus of any one of claims 7-10, ~~characterized in that~~ further comprising an overflow pipe is coaxially set up within the process chamber, the having an open upper end of the overflow pipe being open and disposed above the at least one inlet point to the chamber and [[the]] a lower end thereof extending in annular space relationship with the within said suction line along a section thereof.